

## ABSTRACT OF THE DISCLOSURE

A multi-redundant inlaid wiring harness provides for alternate electrical or optical pathways in an aircraft wiring system. A plurality of conduits are inlaid between layers of composite fabric during fabrication of a section of an aircraft. The conduits are connected at their ends to computer-controlled gateway buses. The buses select a pathway between the buses from the number of possible pathways. If the selected pathway is later damaged, the buses select a new pathway and reroute the power or signal over the new pathway. Conduit selection is based on any of several hierarchies including path of least resistance and shortest or fastest path.